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ABSTRACT

Two studies, one cross-sectional and the other longitudinal, examined individual differences in subjective perceptions of disabilities. In study 1, 37 (22 unsuccessful and 15 successful) applicants to and 29 (12 first year and 17 second year) graduate students in a rehabilitation counseling master's degree program judged the similarity of all possible pairs of 12 disabilities. The similarity judgments were scaled with a three-way multidimensional scaling (MDS) analysis, yielding a three-dimensional solution. Regressing each of 14 attribute ratings onto the MDS stimulus coordinates suggested that the dimensions of normality, severity, and responsibility were significant components of the disability perceptions. Comparison of the students' disability perceptions with dimensions identified from a reanalysis of Tringo's (1970) social distance data provided evidence for the external validity of the normality and severity dimensions. The unsuccessful applicants gave significantly more weight to the normality dimension than did the second year students in judging the similarities among disabilities. In study 2, 14 rehabilitation counseling students completed the questionnaire developed in study 1 at three time points: application, end of first year, and end of the second year of a 2-year master's program. The normality, severity, and responsibility dimensions found using a cross-sectional methodology emerged in the longitudinal MDS analysis. The structure of disability perceptions remained stable across the 2 years of the program. The normality and sensory dimensions became less important and the responsibility dimension more salient as training progressed. The application of MDS to disability perceptions and the relationship of disability perceptions to attitudes toward disabilities and rehabilitation training are discussed. (Author)

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Individual Differences in Disability Perceptions: Cross-Sectional and Longitudinal Investigations

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Abstract

Two studies, one cross-sectional and the other longitudinal, examined individual differences in subjective perceptions of disabilities. In Study 1, thirty-seven (22 unsucessful and 15 successful) applicants to and twenty-nine (12 first year and 17 second year) graduate students in a rehabilitation counseling master's degree program judged the similarity of all possible pairs of twelve disabilities. The similarity judgements were scaled with a three-way multidimensional scaling (MDS) analysis, yielding a three-dimensional solution. Regressing each of 14 attribute ratings onto the MDS stimulus coordinates suggested that the dimensions of normality, severity, and responsibility were significant components of the disability perceptions. Comparision of the students' disability perceptions with dimensions identified from a reanalysis of Tringo's (1970) social distance data provided evidence for the external validity of the normality and severity dimensions. The unsuccessful applicants gave significantly more weight to the normality dimension than did the second year students in judging the similarities among disabilities. In Study 2, 14 rehabilitation counseling students completed the questionnaire developed in Study 1 at three time points: application, end of first year, and end of the second year of a two-year master's program. The Normality, Severity, and Responsibility dimensions found using a cross-sectional methodology emerged in the longitudinal MDS analysis. The structure of disability perceptions remained stable across the two years of the master's program. The Normality and Sensory dimensions became less important and the Responsibility dimension more salient as training progressed. The application of MDS to disability perceptions and the relationship of disability perceptions to attitudes toward disabilities and rehabilitation training are discussed.

Individual Differences in Disability Perceptions: Cross-Sectional and Longitudinal Investigations

Applications of multidimensional scaling (MDS) in psychology and education can be roughly classified into two categories. Descriptive applications are intended to provide descriptions of the domain under investigation, answering such questions as how are the phenomena organized and what is the underlying dimensionality or conceptual basis of that phenomena. In process-oriented applications, MDS provides an informative level of analysis of the process or phenomena being studied. The purpose of the present paper is to describe two MDS studies which investigated perceptions of disabilities, the first being of a descriptive nature and the second focused on process. The brief outline which follows discusses the status of research on disability perceptions, its importance to counselor training, and the advantages and disadvantages of the MDS approach relative to other methods commonly used to investigate perceptions of disabilities.

One person out of five has a disability. Whatever their specialization, therefore, counselors are likely to encounter clients with disabilities. Counselor perception of disabilities affects the counseling interaction; the quality of this interaction affects, in turn, client self-perception (Wright, 1980). Because the impact of counselor perception of disabilities can be crucial, it is important to understand how these perceptions are constructed and whether or not they can be modified. Yet few studies have directly examined perceptions of disabilities.

Typically, researchers have examined either attitudes toward disabilities or disability stereotypes. The disability stereotype literature has focused on a priori perceptual dimensions (e.g., semantic differential) rather than investigating directly the dimensions which underlie these perceptions. Research concerned with the discovery of dimensions or

categories underlying the perceptions of disability has relied on factor analysis of unidimensional ratings on scales simply specified by investigators. These methods have resulted in dimensions contaminated by investigators' preconceptions and oversights and have relied on aggregation of data across subjects, making individual differences in perception difficult to address. MDS applied to direct measures of similarity avoids most of these problems.

Because the nature and development of perceptions of disability has been a neglected area of research, a number of questions remain unanswered: questions remain about the nature of the dimensions along which disabilities are perceived, the complexity of disability perceptions, the stability of perceptions over time, and the relative importance of cognitive dimensions underlying the formation of disability perceptions. Two studies were undertaken to directly investigate perceptions of disabilities and to discover the bases on which these perceptions are made.

As a preliminary step, Study 1 focuses on differences in perceptions of disabilities among students varying in rehabilitation counseling experience and academic training: unsuccessful and successful applicants to a graduate program in rehabilitation, and first and second year rehabilitation counseling students. Using individual differences multidimensional scaling (MDS), judgments of similarity of 12 disabilities were analyzed and correlated with unidimensional scales on which students ranked or rated the disabilities.

Goodyear (1983) indicates that rehabilitation counselors maintain preconceived stereotypes about disabilities (and that these stereotypes affect the quality of services provided) in spite of efforts to modify these stereotypes during graduate training. The assumption that specialized graduate training in rehabilitation affects counseling students' perceptions

of disabilities has rarely been tested. In examining education students' and teachers' perceptions of a set of disabilities common in educational settings, Schmelkin (1982) found functional category dimensions which grew more complex as respondents' experience with disabled students increased. These results were cautiously interpreted as lending limited support to the notion that specialized rehabilitation training may affect counseling students' disability perceptions. It was recognized, however, that alternate interpretations were possible since the data was based on cross-sectional samples. Therefore, shortly after collecting the cross-sectional data on rehabilitation counseling students, I began a longitudinal study of how disability perceptions change during graduate study.

The purpose of Study 2 is to identify the dimensions used by counseling students in order to study how the structure of disability perceptions and the salience of dimensions underlying these perceptions change across a two-year master's degree program, and to compare the findings based on a longitudinal method with those derived from cross-sectional research. I selected 14 graduate students who applied to a master's program in counseling that provided specialized rehabilitation training. This program differs from other counseling programs (school, college personnel, counseling psychology) only in practicum and internship sites and in two second-year courses aimed at changing students' perceptions of disability: Social Psychology of Deviance and Medical Aspects of Disabilities.

Study 1

Method

Disabilities. Three criteria guided the selection of disabilities: disability prevalence estimates; disabilities expected to be encountered by students during practicum and internship; and types of disabilities represented in prior research. A sample size of 12 disabilities allowed

adequate coverage of these criteria without making the similarity judgement task unmanageable. The disabilities selected were: arthritis, emphysema, alcoholism, cerebral palsy, stroke, visual impairment, epilepsy, cancer, hearing impairment, schizophrenia, diabetes, and mental retardation.

Attributes. Prior empirical work and formulations about the nature of disabilities, and the principal investigator's teaching experience were used to generate the following attributes hypothesized to account for the perception of disabilities: severity, familarity, counseling preference, employability, normality, attractiveness, and responsibility. For each attribute, an item was written which requested respondents to rate each disability on a seven-point scale (see Appendix A for a description of the ratings). These ratings were termed 'coincident' since they were completed immediately following the similarity judgement task.

Inspection of the MDS solution produced seven additional attributes hypothesized to correspond to the dimensions. These a posteriori attributes are: psychological-physical symptoms, prognosis, amenability to rehabilitation, responsibility, and visibility. As in the coincident rating task, each disability was rated on a seven-point attribute scale. Unlike the coincident ratings, the a posteriori ratings were completed eighteen months after the disability judgement task.

Respondents. The respondents included applicants to and graduate students in a rehabilitation counseling master's degree program: 22 unsuccessful applicants, 15 successful applicants, 12 first year students, and 17 second year students. For the total sample, 51 of the respondents were female and 15 were male; ages ranged from 21 years to 52 years, with a mean age of 30.4 years.

The respondents who completed the a posteriori ratings were 28 rehabilitation counseling students: 12 men and 16 women, ranging in age from

24 to 50 years old, with a median age of 32 years. None of these respondents were familiar with the disability judgement task.

Procedure. A questionnaire was constructed which asked respondents to rate all possible pairs (n = 66) of the twelve disabilities on a nine-point similarity scale and to rate the disabilities on the seven attribute scales. The students completed the questionnaire during regular scheduled class periods; the applicants did so while they were attending an orientation session to the rehabilitation counseling program. As noted above, the a posteriori ratings were completed eighteen months after the disability judgement task by a separate sample of rehabilitation counseling students.

Analysis. The direct similarity judgements were scaled, separately for the four groups and the total sample, using the ALSCAL (Young & Lewyckyj, 1979) three-way analysis. The attributes ratings for each scale were regressed onto the MDS dimensions to test the attribute hypotheses and to assist in the interpretation of these dimensions. The subject weights were submitted to a one-way analysis of variance to aid in the interpretation of subject spaces and to determine the relative importance of the ALSCAL dimensions for the five respondent groups.

Reanalysis of Tringo's (1970) social-distance data. Tringo's (1970) hierarchy of preferences toward disabled groups was reanalyzed to provide evidence that the perceptual dimensions identified among the rehabilitation applicants and students generalize across classes of persons, settings, time, and method of data collection. In Tringo's study, respondents using a Disability Social Distance Scale (scale points varied from "would marry" to "would put to death") were asked to indicate the closest relationship they would be willing to have with an individual with each of 21 disabilities. This task was co leted by samples of high school students (n = 126), undergraduate students (n = 232), graduate students (n = 64), and

rehabilitation workers (n = 33).

Among the results presented was a matrix of correlations among the 21 disabilities based on the total sample (see Tringo, 1970, p. 302). With the exception of nine disabilities not represented in the present study, it is this correlation matrix that was reanalyzed using ALSCAL4 nonmetric multidimensional scaling.

Results

ALSCAL solutions were obtained for the total sample in two through five dimensions with resultant STRESS values of .282, .201, .164, and .128, respectively. Based on the criteria of goodness-of-fit, interpretability, and reproducibility, a three dimensional solution was retained.

Stimulus coordinates. As shown in Table 1 and displayed in Figure 1, Dimension 1 has psychological-developmental disabilities (schizophrenia, mental retardation, alcoholism) at the negative end and physical disabilities (arthritis, stroke, emphysema) at the positive end. Dimension 2 is marked by terminal illnesses (cancer, emphysema, epilepsy) at the negative end and sensory impairments (hearing impairment, visual impairment) at the positive end. Inspection of Dimension 3 (see Figure 2) showed disabilities with preventable risk factors (diabetes, alcoholism, emphysema, cancer) at the negative end and disabilities with nonpreventable risk factors (cerebral palsy, stroke, mental retardation, epilepsy) at the positive end.

Results of the regression analysis shown in Table 2. For Dimension 1 the physical disabilities at the positive end are perceived to be more "normal" than the mental disabilities at the negative end of the dimension. Not surprisingly, the psychological-physical symptom ratings accounted for 85 percent of the disability variance on Dimension 1. Furthermore, the respondents preferred counseling clients with mental disabilities rather than those with physical disabilities. The terminal illnesses at the negative end

of Dimension 2 are perceived as more severe, as having a poorer prognosis, and as less amenable to rehabilitation methods than the sensory impairments at the positive end of the dimension. Finally, the disabilities with preventable risk factors at the negative end of Dimension 3 were perceived as caused by conditions under the disabled individual's control, caused by conditions for which the individual with the disability is responsible, less subject to stereotyping, less visible, and more attractive than disabilities with less preventable risk factors at the positive end of the dimension.

Validity generalization. External validity of the rehabilitation students' three-dimensional solution was assessed by examining its relationship with MDS dimensions obtained from Tringo's social distance data. The stress values from the nonmetric MDS analysis of the social distance correlation matrix were .16, .09, and .06 for two through four dimensions. Since little improvement in fit was obtained by adding a fourth dimension, the three dimensional solution (dimensions denoted by Roman nummerals, e.g., Dimension III) was retained for further analysis.

Comparison of the rehabilitation students' solution to the social distance solution indicated that the psychological-physical disability dimension and terminal illness-sensory/motor impairment dimension could be mapped onto Dimension I and Dimension III from the social distance solution, respectively. Dimension I has psychological disabilities of mental retardation, mental illness, and epilepsy at the negative end and physical disabilities of arthritis, asthma, and diabetes at the other end. The positive end of Dimension III is represented by sensory/motor impairments of deafness, blindness, and arthritis and the negative end is marked by only one disability--stroke. Dimension II with no clear counterpart in the rehabilitation students' solution had cancer, cerebral palsy, and epilepsy at the positive end and alcoholism at the other end. Intercorrelations of the

stimulus coordinates from the two MDS solutions conform to these interpretations: significant relationships were found between the psychological-physical disability dimension and Dimension I ($r = .74$, $p < .01$) and between the terminal illness-sensory/motor impairment dimension and Dimension III ($r = -.57$, $p < .05$). Finally, canonical correlation analysis of the social distance solution and the rehabilitation students' solution yielded two significant canonicals: a large first canonical of .95 ($X = 27.50$, $p < .01$) and a somewhat smaller second canonical of .84 ($X = 9.57$, $p < .05$), supporting the previous interpretation that although these solutions are not identical, they do share a substantial amount of variance.

Individual differences. Three-dimensional ALSCAL4 solutions were obtained for each of the student groups separately and then regressed onto each other using a canonical correlation analysis. Each of the six analyses resulted in three significant canonical correlations, the first two of which were greater than .88, indicating that these four solutions were nearly identical. For example, regressing the rejected applicants' solution onto the accepted applicants' solution yielded canonical correlations of .99 ($X = 86.48$; $p < .001$), .98 ($X = 49.99$; $p < .001$), and .93 ($X = 20.53$; $p < .001$). In comparison, regressing the rejected applicants' solution onto the second year rehabilitation students' solution resulted in canonical correlations of .98 ($X = 58.71$; $p < .001$), .92 ($X = 27.58$; $p < .001$), and .65 ($X = 7.99$; $p < .005$). Overall, the results from the six canonical regression analyses indicated that the unsuccessful applicants' and successful applicants' disability perceptions were nearly identical and that the rehabilitation students' disability perceptions were slightly more like each other than like those of the applicant groups.

The total group mean salience weights for the one through three dimensions were .42, .40, and .40, respectively. Thus, the respondents

placed slightly more importance on the first dimension than on the second and third dimensions in judging similarity among the disabilities. Comparison among the respondent groups on the relative salience weights resulted in significant differences for Dimension 1 relative to Dimension 3, $F(3,62) = 2.66$, $p = .05$. These mean relative salience weights were .07, -.01, .02, and -.16 for the unsuccessful applicants, successful applicants, first-year students, and second-year students, respectively. Dimension 1 is more important than Dimension 3 for the unsuccessful applicants, while Dimension 3 is more salient than Dimension 1 for the second-year students. A Student-Newman-Keuls test showed that the unsuccessful applicants gave significantly ($p < .05$) more weight to the psychological-physical disability dimension than the second-year students.

Discussion

The findings of the present study show the type of dimensions and cognitive structure that may underlie the attitudes toward disability of rehabilitation counseling students and argue for a multidimensional approach to understanding the perceptions of disability. The perceptual process of judged similarity of disabilities is represented by the dimension labels, such as normality, severity, and responsibility, which signify certain shared assumptions. These shared assumptions may constitute the foundation for reactions to disability. A structure of disability perceptions may therefore aid in understanding attitude formulation and reactions toward the disabled and guide efforts in the design of interventions to change those attitudes.

Dimension 1, a continuum from psychological to physical disabilities, is similar to Tringo's (1970) hierarchical ordering of disabilities based on social distance ratings. In the present study, Dimension 1 was found to be highly related to normality ratings: students perceived the general public as attributing more "normality" to physical disabilities in contrast to

psychological disabilities. Surprisingly, counselor preference was found to be negatively related to Dimension 1: rehabilitation students preferred counseling clients with psychological-developmental disabilities. This finding is contrary to prior findings (e.g., Goodyear, 1983) and is counterintuitive to stigma notions.

The second year students attached significantly less importance to Dimension 1 than did the other respondent groups. In addition, a slight trend of decreasing importance of Dimension 1 was found to be related to the students' increasing educational and practical rehabilitation experience. These results provide limited support to the notion that this program's current rehabilitation training practices may have effects, especially by the second year, on students' disability perceptions. Nevertheless, a case could be made that the MDS dimensions, in general, are relatively stable across groups; this suggests, in turn, that attention to rehabilitation program applicants' perceptions of disabilities may be important, or that curricula should be designed to affect these perceptions. These alternative interpretations of the present results can be addressed only with a longitudinal study.

Study 2

Method

Respondents. Fourteen (12 female, 2 male) students in a two-year rehabilitation counseling program; 22 to 49 years old (M = 28.8).

Procedure. Respondents completed the questionnaire developed for Study 1 which asked for ratings on a nine-point similarity scale of all possible pairs of twelve disabilities and for ratings on seven attribute scales. The three time-points were: application (Time 1), end of first year (Time 2), and end of second year (Time 3).

Analysis. Direct similarity judgments were scaled for the three time

points using three-way multidimensional scaling (MDS; ALSCAL, Young & Lewyckyj, 1979). Coincident and a posteriori attribute ratings were regressed onto the MDS dimensions to test the attribute hypotheses and to assist in interpreting the MDS dimensions. The relative subject weights were submitted to a MANOVA repeated measures analysis to aid in the interpretation of subject spaces and to determine the relative importance of the perceptual dimensions at the three time points.

Results

Stimulus coordinates. Based on criteria of goodness-of-fit and interpretability, a four-dimensional solution was selected. As shown in Table 3, Dimension 1 has mental disabilities (schizophrenia, mental retardation) at one end, and physical disabilities (emphysema, cancer) at the other. Dimension 2 is marked by poor-prognosis disabilities (schizophrenia, cancer, stroke) at one end, and disabilities more amenable to treatment (diabetes, arthritis, visual impairment, hearing impairment) at the other. Inspection of Dimension 3 showed disabilities with preventable risk factors (alcoholism, diabetes, emphysema) at one end, and disabilities with nonpreventable risk factors (cerebral palsy, mental retardation, arthritis) at the other. Dimension 4 is marked by physical disabilities (epilepsy, diabetes, arthritis) at one end, and sensory impairments (hearing impairment, visual impairment) at the other. As shown in Table 4, these interpretations of the four dimensions are supported by results of the regression analysis which indicate Dimension 1 is correlated with normality ($r = .76$, $p < .01$); Dimension 2 with severity ($r = .89$, $p < .01$), attractiveness ($r = -.75$, $p < .01$), and impact ($r = .82$, $p < .01$); Dimension 3 with attributions of responsibility ($r = .67$, $p < .01$); and Dimension 4 with sensory impairment ($r = .76$, $p < .01$).

Individual differences. Four-dimensional ALSCAL solutions were

obtained for each of the three assessments and then regressed onto each other using a canonical correlation analysis. These results indicated that the structure of disability perceptions was very similar across the three time points. Significant multivariate F tests on the relative subject weights were found for the Normality relative to the Responsibility Dimension, and for the Responsibility relative to the Sensory Dimension. Univariate results indicated near significant difference between Time 1 and Time 3 for the Normality relative to the Responsibility Dimension ($F(1,13) = 3.52$, $p < .08$), and for the Responsibility relative to the Sensory Dimension ($F(1,13) = 3.91$, $p < .07$). Comparison of Time 2 and Time 3 showed significant differences for the Normality relative to the Responsibility Dimension ($F(1,13) = 5.69$, $p < .03$), and the Responsibility relative to the Sensory Dimension ($F(1,13) = 18.22$, $p < .001$). Graphing the relative subject weights for the three time points showed that the salience of the Normality Dimension relative to the Responsibility Dimension decreases across the three time points with the greatest change occurring between Times 2 and 3. More complexly, the Sensory Dimension increases in importance between Times 1 and 2, but at Time 3 a reversal occurs with the Responsibility Dimension more salient than the Sensory Dimension.

Discussion

While the findings are based on a small sample (often the case with longitudinal studies and the few prior applications of multidimensional scaling, e.g., Jones & Young, 1972), the present dimensions of Normality, Severity, and Responsibility are very similar to those found using a cross-sectional methodology.

Disability perception structure did not change across the two-year master's program, supporting Goodyear's (1983) conclusion that preconceived stereotypes persist despite efforts to modify them during graduate training.

Nevertheless, the present study showed a shift in the type of dimensions used by counseling students to organize their perceptions: the normality and sensory dimensions became less important as training progressed, while the responsibility dimension (responsibility for the conditions which led to the disability) increased in importance. Furthermore, a dramatic shift in dimensional salience was found between the end of the first year and graduation: the responsibility dimension became more important than the normality and sensory dimensions. This shift coincides with specialized training aimed at affecting students' disability perceptions, as well as with students' increased counseling experience. Unfortunately, the lack of a comparision group (counseling students with no specialized training) militates against drawing more definitive conclusions about the effects of rehabilitation training on disability perceptions.

The results do imply that while disability perceptions are highly resistant to change, there is reason to believe that the salience of the dimensions organizing perceptions of disabilities can be altered by graduate training. Research on disability perceptions raises important questions about counselor training programs and their role in actively fostering appropriate and useful perceptual categories in counseling program graduates.

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Table 1

Stimulus Coordinates for the Three-Dimensional MDS Solution

	Dimension		
Disability	1	2	3
Arthritis	1.59	.61	.10
Emphysema	.84	-1.51	-1.12
Alcoholism	-1.07	-.29	-1.28
Cerebral Palsy	.40	-.22	1.61
Stroke	.88	-.28	1.11
Visual Impairment	-.01	1.78	-.16
Epilepsy	-.03	-1.04	.98
Cancer	.82	-1.44	-.98
Hearing Impairment	-.24	1.81	.17
Schizophrenia	-1.90	-.60	-.02
Diabetes	.23	.56	-1.47
Mental Retardation	-1.51	.16	1.06

Note. N = 66

Table 2

Correlations of Three-Dimensional Coordinates with Attribute Ratings

	Multiple	Dimension		
Attribute	R	1	2	3
Coincident				
Normality	.93**	.73**	.13	-.58*
Employability	.65	.49*	.17	-.39
Severity	.61	.11	.52*	-.27
Controllability	.80*	.02	.35	.74**
Attractiveness	.79*	-.31	-.38	.60*
Counseling preference	.67	-.60*	-.22	-.16
Familiarity	.60	-.45	-.05	-.37
A posteriori				
Psychological-physical symptoms	.94**	.92**	.17	-.06
Prognosis	.70	.39	.53*	-.19
Amenability to rehabilitation	.59	-.07	.59*	.04
Responsibility	.72	.07	.34	.64**
Identification	.73	.41	-.21	-.61*
Visibility	.69	-.07	-.05	-.69**
Sensory impairment	.45	-.27	.38	.07

Note. Coincident ratings were obtained from rehabilitation students (n = 66) who completed the MDS task. A posteriori ratings were obtained from rehabilitation students (n = 28) who did not complete the MDS task.

*p < .05. **p < .01.

Table 3

Stimulus Coordinates for the Four-Dimensional MDS Solution

	Dimension			
Disability	1	2	3	4
Arthritis	-.92	-1.21	-.81	.87
Emphysema	-1.66	.46	.72	.14
Alcoholism	.56	.78	1.75	.18
Cerebral Palsy	.61	.05	-1.78	.65
Stroke	-.71	1.15	-1.23	-.25
Visual Impairment	-.07	-1.26	.11	-1.69
Epilepsy	.82	-.55	.18	1.61
Cancer	-1.52	1.29	.32	.42
Hearing Impairment	.01	-1.13	-.14	-1.76
Schizophrenia	1.23	1.30	1.02	-.61
Diabetes	.02	-1.31	.91	1.09
Mental Retardation	1.65	.42	-1.04	-.63

Note. N = 14

Table 4

Correlations of Four-Dimensional Coordinates with Attribute Ratings

	Multiple	Dimension			
Attribute	R	1	2	3	4
Coincident					
Normality	.93**	-.76**	-.36	.26	.34
Employability	.94**	-.32	-.73**	.14	.47
Severity	.95**	.00	-.89**	.16	.21
Controllability	.78	.45	-.42	-.54*	.08
Attractiveness	.90**	.20	.75**	-.39	-.11
Counseling preference	.38	-.26	-.06	.13	-.22
Familiarity	.42	.25	.07	.18	-.29
A posteriori					
Psychological-physical symptoms	.94**	-.71**	-.49*	-.32	.29
Prognosis	.85*	-.20	-.81**	.11	.07
Amenability to rehabilitation	.65	.19	-.56*	.02	-.29
Responsibility	.91**	.38	-.55*	-.67**	.11
Identification	.88*	-.48	-.27	.51*	.50*
Visibility	.82	-.17	-.20	.75**	.14
Sensory impairment	.81	.04	.27	.03	-.76**

*p < .05. **p < .01.

Appendix A

Attribute Scales

Attribute	Abbreviated Scale Statement
Normality	How normal the general public perceives an individual with this disability (1 = not at all normal, 7 = normal)
Employability	How difficult it would be for a person with this disability to obtain and maintain full-time competitive employment (1 = extremely difficult, 4 = moderately difficult, 7 = not at all difficult)
Severity	Your perception of the severity of the disability (1 = very severe, 7 = not at all severe
Controllability	The extent of control an individual has over the conditions which led to the disability (1 = complete control, 7 = very little control)
Attractiveness	How attractive you perceive a person with this disability (1 = most attractive, 7 = least attractive)

(Appendix continues)

Attribute	Abbreviated Scale Statement
Counseling Preference	Your preference for counseling a client with this disability (1 = not at all interested, 4 = moderately interested, 7 = extremely interested)
Familiarity	How familiar you are with this disability (1 = not at all familiar, 4 = moderately familiar, 7 = very familiar)
Psychological-physical symptoms	Describe the symptoms of this disability (1 = mostly psychological symptoms, 7 = mostly physical symptoms)
Prognosis	Describe the prognosis for an individual with this disability to live a normal life (1 = very poor, 7 = very good)
Amenability to rehabilitation	How amenable this disability is to rehabilitation methods (1 = not at all, 4 = moderately, 7 = extremely)

(Appendix continues)

Attribute	Abbreviated Scale Statement
Responsibility	In general how responsible an individual is for the conditions which lead to the disability (1 = completely, 4 = moderately, 7 = not at all)
Identification	Describe the degree to which outside observers would identify an individual with the disability itself (1 = completely, 7 = not at all)
Visibility	Describe the visibility of the disability itself (visibility of the actual impairment) (1 = visible, 7 = invisible)
Sensory impairment	Indicate the extent to which the disability affects sensory capabilities (1 = not at all, 4 = moderately, 7 = extremely)

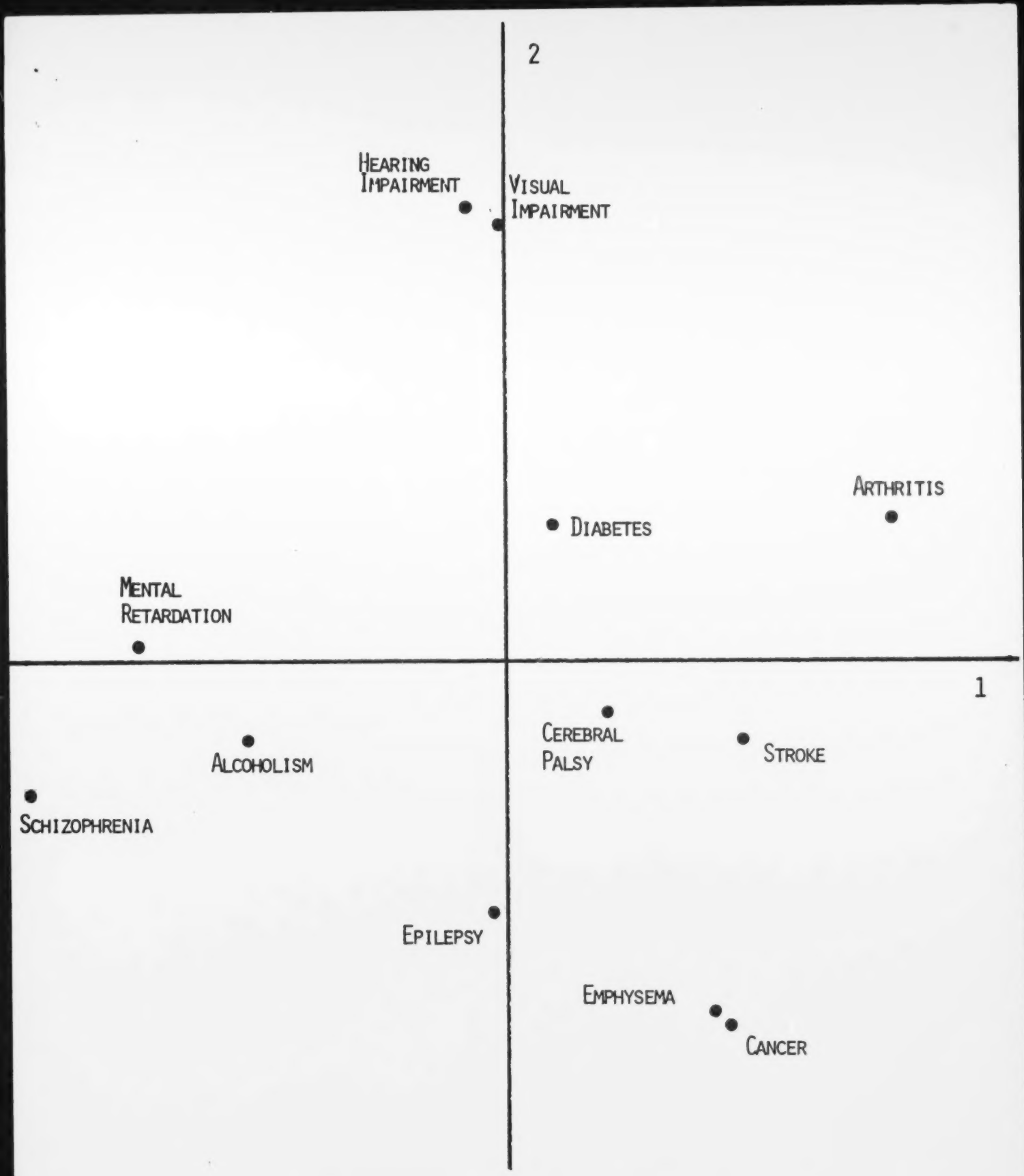

FIGURE 1. DIMENSION 1, THE NORMALITY DIMENSION, PLOTTED AGAINST DIMENSION 2, THE SEVERITY DIMENSION

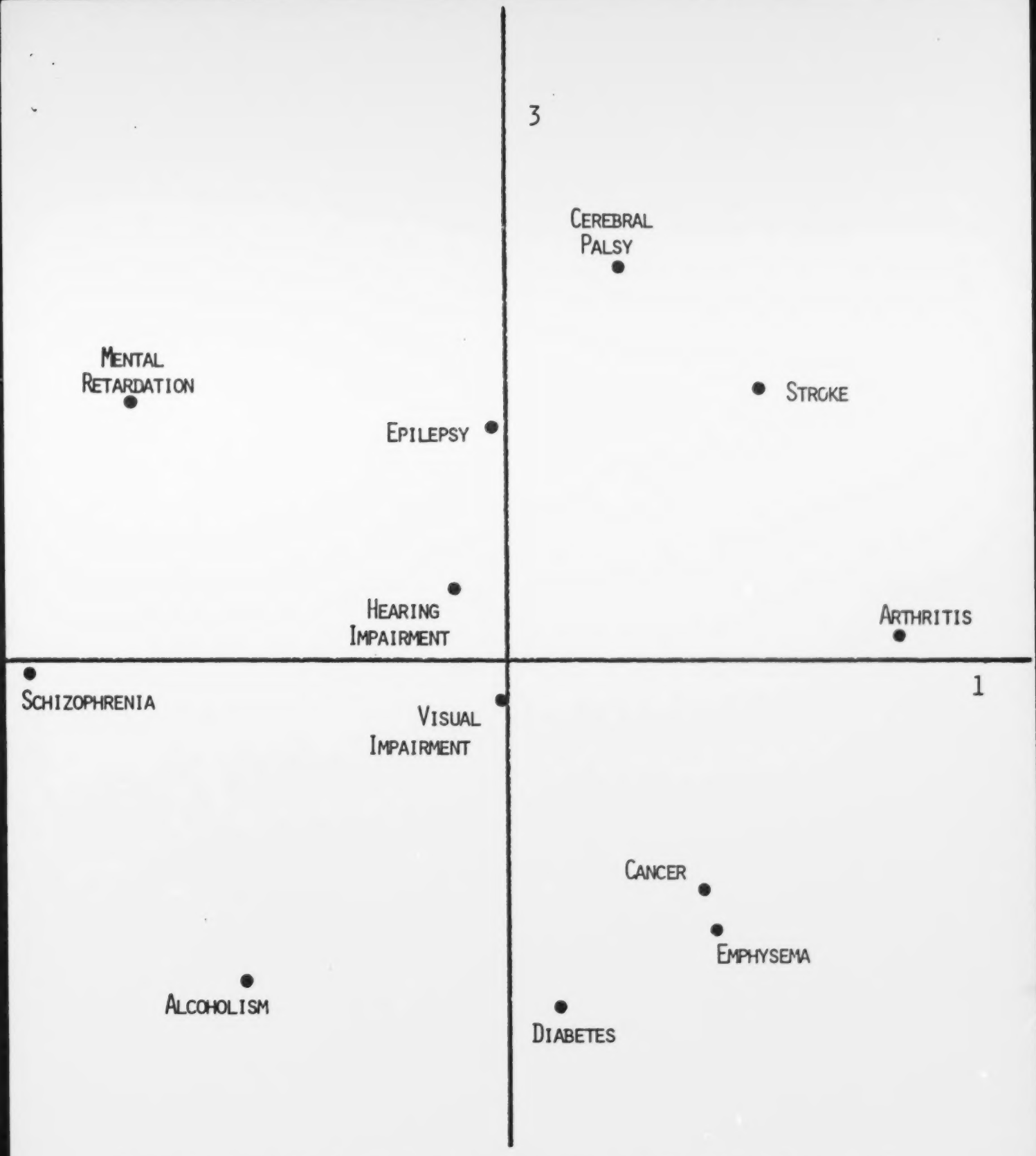

FIGURE 2. DIMENSION 1, THE NORMALITY DIMENSION, PLOTTED AGAINST DIMENSION 3, THE RESPONSIBILITY DIMENSION